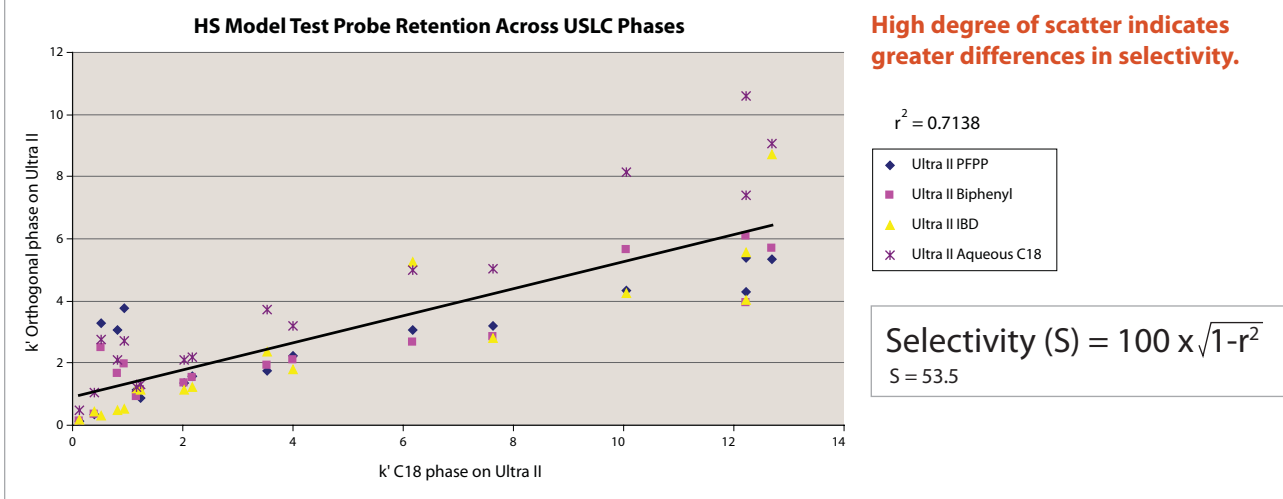


Evaluating and Extending Selectivity

Restek leads the industry in USLC™ phase diversity because optimal differences in selectivity are built in during the research and development of our bonded phases.

The diversity in selectivity provided by USLC™ columns can be demonstrated empirically using the hydrophobic-subtraction (HS) model [1]. This model is a novel procedure for characterizing selectivity that uses test probes to define the solute and stationary phase interactions in reversed phase separations. Restek is leading the commercial application of this model by implementing it in the research and development of USLC™ bonded phases. To evaluate phase selectivity using the hydrophobic-subtraction model, the retention characteristics of the solute probes are compared across different phases on the same silica base. In this approach, the range of selectivity is indicated by the degree of scatter along the regression line; high correlations indicate similarity and low correlations represent changes in selectivity across phases (Figure 2). The difference in selectivity across columns can then be quantified based on the correlation by calculating the selectivity (S) statistic for the comparison [2].

Figure 2 Restek has extended the selectivity range for reversed phase separations as illustrated by the hydrophobic-subtraction model and corresponding selectivity (S) value.



USLC™ Columns: Selectivity Choices Optimize Separations

Restek USLC™ columns offer the widest range of selectivities available and are an integral part of successful method development (Figure 3). Ideal for column switching systems, these columns provide the orthogonal separations needed to create optimal resolution and robust methods. Combining USLC™ phases with a suitable column format gives practicing chromatographers the most powerful tool available for successful method development.

Figure 3: Restek offers the widest range of selective phases available on any column line.

Common Reversed Phase Column Type	Column Line						
	Restek Ultra II 1.9, 2.2, 3, 5 and 10µm	Waters Acquity CSH 1.7, 3.5 and 5 µm	Waters Acquity HSS 1.8, 3.5 and 5 µm	Waters Acquity BEH 1.7, 2.5, 3.5, 5 and 10 µm	Phenomenex Kinetex 1.7 and 2.6 µm	Agilent Zorbax RRHD 1.8, 3.5 and 5 µm	Agilent Poroshell 120 2.7 µm
Alkyl (C18 and C8)	●	●	●	●	●	●	●
Phenyl	●	●		●			
Polar Embedded Alkyl	●						
Fluorophenyl	●	●			●		

References (Not available from Restek.)

- [1] L.R. Snyder, J.W. Dolan, P.W. Carr, J. Chromatogr. A 1060 (2004) 77.
- [2] U.D. Neue, J.E. O'Gara, A. Mendez, J. Chromatogr. A 1127 (2006) 161.

We're here to help!

To discuss the right selectivity for your separation or to find a comparable column, **contact us at support@restek.com or 800-356-1688.**